

**WHAT IS CLAIMED IS:**

1           1.       A protective cap for adhesion to a substrate, the cap comprising:  
2                   a substantially flat base sheet;  
3                   a dome extending outwardly from an obverse side of the base sheet and  
4       forming a cavity in the opposite side of the base sheet, the cavity sized for substantially  
5       encapsulating a connector;  
6                   a semi-tubular shield extending outwardly from one side of the base sheet  
7       and defining a channel in the opposite side of the base sheet extending from the cavity  
8       toward the periphery of the base sheet; and  
9                   an integrated primer layer comprising a pressure-sensitive adhesive and  
10      attached to the reverse side of the base sheet for application to the substrate.

1           2.       The cap of claim 1 in which the primer layer comprises a polyolefin  
2       material and synthetic elastomers.

1           3.       The cap of claim 1 in which the primer layer comprises thermoplastic  
2       elastomers and synthetic resins.

1           4.       The cap of claim 1 in which the primer layer is a material selected from  
2       the group containing polyolefin and synthetic elastomers.

1           5.       The cap of claim 1 in which the primer layer has a service temperature of  
2       between about -30 and 150 degrees F (-35 to 66 degrees C).

1           6.       The cap of claim 1 in which the primer layer has an application  
2       temperature of at least about -10 degrees F (-23 degrees C).

1           7.       The cap of claim 1 in which the primer layer has a total thickness from  
2       between about 20 and 60 mils (1 and 1.52 mm).

1           8.       The cap of claim 1 in which the primer layer is elastically deformable to  
2       about a 0.5 in radius at about -40 F (15.7 radius at -28.9 C).

1           9.       The cap of claim 1 in which the primer layer exhibits a dielectric strength  
2 of at least about 15 kV.

1           10.     The cap of claim 1 in which the primer layer exhibits a resistivity of at  
2 least about  $10^8$  megohms.

1           11.     The cap of claim 1 wherein the primer layer absorbs less than about 0.05  
2 percent water, by weight of the primer layer.

1           12.     The cap of claim 1 in which the base sheet comprises substantially linear  
2 perforations for improved flexibility.

1           13.     The cap of claim 1 wherein the cavity contains a yieldable insulating  
2 liquid compound conforming around the connector.

1           14.     The cap of claim 1 further comprising at least one release liner attached  
2 thereto, extending along the obverse side of the base.

1           15.     A protective cap for a connector adapted for adhesion to a substrate, the  
2 cap comprising:  
3                 a planar base sheet;  
4                 an igloo-shaped dome extending outwardly from an obverse side of the  
5 base sheet and forming a cavity in the opposite side of the base sheet, the cavity sized for  
6 encapsulating the metal connector;  
7                 a semi-tubular shield extending outwardly from one side of the base sheet  
8 and defining a channel in the opposite side of the base sheet extending from the cavity  
9 toward the periphery of the base sheet, the shield sized for substantially encapsulating a  
10 lead extending from the connector;  
11                an integrated primer layer comprising a pressure-sensitive adhesive and  
12 attached to the reverse side of the base sheet for application to the substrate; and  
13                an adhesive layer having at least one release line attached thereto,  
14 extending along the obverse side of the base.

1                   16.           The cap of claim 1 in which the primer layer is  
2 substantially cathodic disbondment resistant.

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1           17.    A method for protecting a wire lead extending from a substrate, the  
2 method comprising:

3                               providing a protective cap comprising a substantially flat  
4 base sheet and an integrated primer layer along a lower surface of the sheet, the primer  
5 layer including a pressure-sensitive adhesive protected by a release liner;

6                               positioning the protective cap proximate the wire lead;

7                               removing the release liner to expose the pressure-sensitive  
8 adhesive; and

9                               applying the protective cap to the wire lead such that at  
10 least part of the lead penetrates the integrated primer layer.

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1           18.    The method of claim 17 in which the base sheet includes substantially  
2 linear perforations for improved flexibility and further comprising bending the protective  
3 cap about the substrate along at least the perforations.